

field until one of: (i) a match occurs and (ii) none of the multiple find criteria are found to match the field content, and wherein the replacement value corresponding to the matching find criteria is inserted into the field.

45. The memory device of claim 4, wherein the at least one rule definition further comprises a sort column including values to use to sort the multiple find criteria and corresponding replacement value, wherein the multiple find criteria are applied to each field in the input data column in the order specified in the sort column.

46. The memory device of claim 40, wherein the rule definition comprises a type of rule that is a member of the set of rules consisting of: find and replace, discretization, and numeric clip, wherein at least two rule definitions are comprised of different rule types.

REMARKS

Claims 1-46 are pending in the application. Claims 1, 14, 27, and 40 have been amended. Reconsideration is respectfully requested.

Applicants' are submitting a drawing sheet with figure numbers FIG. 2 and FIG. 3 and with red ink showing that the word "FIG. 3" should be removed from the drawing sheet. Applicants' are also submitting a drawing sheet for FIG. 6d with red ink showing that the word "Yes" should be removed on the arrow entering block 300. Applicants' respectfully request entry of these amendments.

In paragraph 4, the Office Action rejects claims 1-7, 13-20, 26-33, and 39-46 under 35 U.S.C. §102 as being anticipated by Knudsen et al. (U.S. Patent No. 5,596,752). Applicants traverse these rejections for the following reasons.

Claim 1 describes a method for performing a clean operation on an input table having an input table name. The method comprises receiving at least one rule definition, wherein each rule definition indicates a find criteria, a replacement value, and an input data column in the input table; searching, for each rule definition, the input data column for any fields that match the find

criteria; and, if the rule definition does not specify an output table, directly inserting, for each rule definition, the replacement value in the fields in the input data column that match the find criteria, wherein subsequent applications of additional rule definitions applied to the same input data column operate on replacement values inserted in the input data column in previously applied rule definitions.

The Knudsen patent describes rules that have four parts: the rule definition, conditions, actions, and exception handlers. (Col. 5, lines 11-15) "Rules enter new information into the table by first placing the new data in the appropriate fields of a table template and then executing either a REPLACE or an INSERT statement. Rules retrieve information from the table into a table template with a GET statement or a FORALL statement. Rules delete information from the table by placing the information in a table template and then executing a DELETE statement (the table template is undefined after a DELETE statement)." (Col. 10, lines 43-54)

Applicants' claim 1 states "receiving at least one rule definition, wherein each rule definition indicates a find criteria, a replacement value, and an input data column in the input table." The Knudsen patent instead describes rules that have four parts: the rule definition, conditions, actions, and exception handlers. (Col. 5, lines 11-15) The Knudsen patent does not *indicate a find criteria and a replacement value for each rule definition*. For example, the Knudsen patent describes a sample rule named LEAPYEAR in which the action is to RETURN ('Y') or RETURN ('N') - no replacement value is needed for this example in Knudsen. (Col. 5, line 48-Col.6, line 8) Thus, the Knudsen patent does not teach or suggest Applicants claimed subject matter, and, in fact, teaches away from Applicants' claimed subject matter. Also, the rule definition of Knudsen includes "a rule header (obligatory) and a declaration of local variables (optional)." (Col. 7, lines 27-30) The rule definition as claimed by Applicants' does not include a rule header or a declaration of local variables.

Moreover, Applicants' claim 1 states "if the rule definition does not specify an output table, directly inserting, for each rule definition, the replacement value in the fields in the input data column that match the find criteria, wherein subsequent applications of additional rule definitions applied to the same input data column operate on replacement values inserted in the

input data column in previously applied rule definitions." The Knudsen patent does not *directly insert replacement values* in the fields in the input data column. Instead, the rules of the Knudsen patent "enter new information into the table by first placing the new data in the appropriate fields of a table template and then executing either a REPLACE or an INSERT statement." The entry of information into a table template teaches away from Applicants' claimed subject matter. Furthermore, the Knudsen patent does not check that "the rule definition does not specify an output table," before placing the new data into a table or a table template.

Therefore, claim 1 is not anticipated by the Knudsen patent. Independent claims 14, 27, and 40 are not anticipated by the Knudsen patent for the same reasons discussed above with respect to claim 1. Dependent claims 2-13, 15-26, 28-39, and 41-46 are patentable over the cited art because they add additional novel elements and depend from claims 1, 14, 27, and 40, each of which is patentable over the cited art for the reasons discussed above.

For example, claims 2, 15, and 28 describe that each rule definition is associated with one rule table including the find criteria and replacement value, wherein a rule table column parameter for each rule definition indicates the columns in the rule table including the find criteria and replacement value for the rule definition. On the other hand, the Knudsen patent states: "The rule can be found as rule object code in one of the libraries, as a built in function or sub-routine . . . , a customer defined external routine . . . , or it could be a local variable reference, rather than a call to an actual rule." (Col. 61, lines 45-54) That is, the Knudsen patent does not associate a rule table with each rule definition as claimed by Applicants'. Col. 76, lines 15-35 was cited (along with other portions of the Knudsen patent) as teaching Applicant's rule table. The cited portion of Col. 76 describes a TOKENS table, but the TOKENS table is not equivalent to Applicants' rule table. Moreover, the Knudsen patent describes a rule name hash table, (Col. 62, lines 4-19), which is also not equivalent to Applicants' claimed rule table. Moreover, the Knudsen patent does not describe "a rule table column parameter for each rule definition indicates the columns in the rule table including the find criteria and replacement value for the rule definition" as claimed by Applicants'.

Claims 3, 16, and 29 describe that there is a separate rule table including the find criteria and replacement value associated with at least one rule definition, wherein, for each rule definition, a rule table column parameter indicates the columns in the rule table for the rule definition including the find criteria and replacement value for that rule definition. As discussed with respect to claims 2, 15, and 28, the Knudsen patent does not mention a rule table as claimed by Applicants'.

Claims 4, 17, and 30 describe that the input data column for a first and second applied rule definitions is the same input data column, wherein the replacement value for the first rule definition is inserted into at least one field in the input data column, and wherein the find criteria of the second rule definition is applied to the replacement value inserted in the input data column. The Knudsen patent will "enter new information into the table by first placing the new data in the appropriate fields of a table template and then executing either a REPLACE or an INSERT statement," and does not teach or suggest that the find criteria of the second rule definition is applied to the replacement value inserted in the input data column as claimed by Applicants'.

Claims 5, 18, 31, and 44 describe that at least one rule definition includes multiple find criteria and a corresponding replacement value for each find criteria, wherein the step of searching the input data column comprises applying each of the multiple find criteria to one field until one of: (i) a match occurs and (ii) none of the multiple find criteria are found to match the field content, and wherein inserting the replacement value comprises inserting the replacement value corresponding to one find criteria that matched the field content. The cited text at Col. 70, lines 24-55 describes a LIKE relational operator, but this does not teach or suggest Applicants' claimed subject matter. The remaining cited portions of the Knudsen patent do not teach or suggest Applicants' claimed subject matter.

Claims 6, 19, 32, and 45 describe that a sort column includes values to use to sort the multiple find criteria and corresponding replacement value, wherein the step of searching comprises applying the multiple find criteria to each field in the order specified in the sort

column. The Knudsen patent does not describe a sort column for applying the multiple find criteria to each field in the order specified in the sort column.

Claims 7, 20, 33, and 46 describe that the rule definition comprises a type of rule that is a member of the set of rules consisting of: find and replace, discretization, and numeric clip, wherein at least two rule definitions are comprised of different rule types. The Knudsen patent describes rules such as LEAPYEAR and COUNT_CARS (Col. 5, lines 61-Col. 6, lines 49), but does not teach or suggest Applicants' claimed rules.

Claims 13, 26, and 39 describe that the rule definitions include a row clean flag, and at least one rule definition has the row clean flag set, and further comprising removing any row including a field matching the search criteria from the input table when the row clean flag is set. The cited portions of Knudsen patent at Col. 14, line 59-Col. 15, line 46 describe a SCHEDULE statement, a TRANSFERCALL statement, and an EXECUTE statement. None of these statements mentions a row clean flag and removing or mentions removing any row including a field matching the search criteria from the input table when the row clean flag is set.

Claims 41 and 42 also describe a rule table, which is not taught or suggested by the Knudsen patent.

In paragraph 5, the Office Action rejects claims 8-12, 21-25, and 34-38 under 35 U.S.C. §103(b) as being unpatentable over Knudsen et al. (U.S. Patent No. 5,596,752) in view of Delong et al. (U.S. Patent No. 6,185,552). Applicants traverse these rejections for the following reasons.

There is no motivation to combine the Knudsen and Delong patents, but, even if these patents are combined, the combination does not result in Applicants' invention. In particular, the Delong patent does not overcome the deficiencies of the Knudsen patent.

Claims 8, 21, and 34 describe that the find criteria for at least one rule definition comprises an upper bound and lower bound, wherein searching comprises searching for any fields that have values within the upper and lower bounds. The Office Action states that the Knudsen patent does not "clearly teach" the subject matter of claims, 8, 21, and 34. The Delong patent states: "a search begins at an upper or lower bound of the table and progresses until the

desired key value is located or until the opposite bound is reached." (Col. 1, lines 33-48) That is, the Delong patent searches from an upper bound to a lower bound. On the other hand Applicants' claimed subject matter describes *searching for any fields that have values within the upper and lower bounds*. That is, Applicants' search for fields having values where the values fall within the upper and lower bounds. Thus, claims 8, 21, and 34 are patentable over the Knudsen and Delong patents, either alone or together.

Claims 9, 10, 22, 23, 35, and 36 depend from claim 8, 21, and 34, respectively, and are patentable over the Knudsen and Delong patents, either alone or together.

Claims 11, 24, and 37 describe that the find criteria for at least one rule definition comprises an upper bound and lower bound and wherein the replacement value is an upper replacement value and further comprising a lower replacement value, wherein searching comprises searching for any fields that have values within the upper and lower bounds and wherein inserting comprises inserting the upper replacement value if the field has a value greater than the upper bound and inserting the lower replacement value if the field has a value less than the lower bound. The Office Action states that the Knudsen patent does not "clearly teach an upper bound and lower bound." The Delong patent states: "a search begins at an upper or lower bound of the table and progresses until the desired key value is located or until the opposite bound is reached." (Col. 1, lines 33-48) That is, the Delong patent searches from a an upper bound to a lower bound. On the other hand Applicants' claimed subject matter describes *searching for any fields that have values within the upper and lower bounds and wherein inserting comprises inserting the upper replacement value if the field has a value greater than the upper bound and inserting the lower replacement value if the field has a value less than the lower bound*. That is, Applicants' search for fields having values where the values fall within the upper and lower bounds and inserting inserts either the upper replacement value or the lower replacement value. Thus, claims 11, 24, and 37 are patentable over the Knudsen and Delong patents, either alone or together.

Claims 12, 25, and 38 depend from claims 11, 24, and 37, respectively, and are patentable over the Knudsen and Delong patents, either alone or together.

CONCLUSION

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached pages are captioned "Version with Markings to Show Changes Made."

For all the above reasons, Applicant submits that the pending claims 1-46 are patentable over the art of record, and allowance is requested of claims 1-46.

Applicants have not added any claims. Nonetheless, should any additional fees be required, please charge Deposit Account No. 09-0460.

The attorney of record invites the Examiner to contact her at (310) 556-7983 if the Examiner believes such contact would advance the prosecution of the case.

Dated: October 31, 2002

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

In the following claims, insertions are underlined, and deletions are enclosed in brackets.

This response amends claims 1, 14, 27, and 40.

1. (Amended) A method for performing a clean operation on an input table having an input table name, comprising:

receiving at least one rule definition, wherein each rule definition indicates a find criteria, a replacement value, and an input data column in the input table;

searching, for each rule definition, the input data column for any fields that match the find criteria; and

if the rule definition does not specify an output table, directly inserting, for each rule definition, the replacement value in the fields in the input data column that match the find criteria, wherein subsequent applications of additional rule definitions applied to the same input data column operate on replacement values inserted in the input data column in previously applied rule definitions.

14. (Amended) A system for performing a clean operation on an input table having an input data table name, comprising:

means for receiving at least one rule definition, wherein each rule definition indicates a find criteria, a replacement value, and an input data column in the input table;

means for searching, for each rule definition, the input data column for any fields that match the find criteria; and

means for, if the rule definition does not specify an output table, directly inserting, for each rule definition, the replacement value in the fields in the input data column that match the find criteria, wherein subsequent applications of additional rule definitions applied to the same input data column operate on replacement values inserted in the input data column in previously applied rule definitions.

27. (Amended) An article of manufacture for use performing a clean operation on an input table in a database having an input data table name, the article of manufacture comprising computer usable media including at least one computer program embedded therein that causes the computer to perform:

receiving at least one rule definition, wherein each rule definition indicates a find criteria, a replacement value, and an input data column in the input table;

searching, for each rule definition, the input data column for any fields that match the find criteria; and

if the rule definition does not specify an output table, directly inserting, for each rule definition, the replacement value in the fields in the input data column that match the find criteria, wherein subsequent applications of additional rule definitions applied to the same input data column operate on replacement values inserted in the input data column in previously applied rule definitions.

40. (Amended) A memory device including a command for performing a clean operation on a computer database input table, the command comprising

an input data table name parameter indicating the input table subject to the clean operation; and

at least one rule definition, wherein each rule definition includes a find criteria, a replacement value, and an input data column in the input table, wherein, for each rule definition, the input data column is searched for any fields that match the find criteria, wherein, for each rule definition, if the rule definition does not specify an output table, the replacement value is directly inserted in the fields in the input data column that match the find criteria, and wherein subsequent applications of additional rule definitions applied to the same input data column operate on replacement values inserted in the input data column in previously applied rule definitions.